

AD-A094 838 ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2
19311C MLRS, MISSILE NUMBER V18-001, ROUND NUMBER V-128/DF-1, 6--ETC(U)
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DR 1161
NOVEMBER 1980

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LEVEL II

METEOROLOGICAL DATA REPORT

1937IC MLRS
Missile No. V18-001
Round No. V-128/DF-7
06 November 1980

by

White Sands Meteorological Team

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FEB 10 1981
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ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

ECOM

UNITED STATES ARMY ELECTRONICS COMMAND

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19311C MLRS, Missile Number V18-001, Round Number V-128/DF-1 presented in tabular form.			

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INTRODUCTION

19311C MLRS, Missile Number V-18-001, Round Number V-128/DF-1,
was launched from LC-33, White Sands Missile Range (WSMR), New
Mexico, at 1010 MST on 06 Nov 1980. The scheduled launch time
was 0955 MST.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 met site at T-0 minutes.

(2) Monitor of wind speed and direction from one anemometer was provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from RAPTS T-9 pibal observation at:

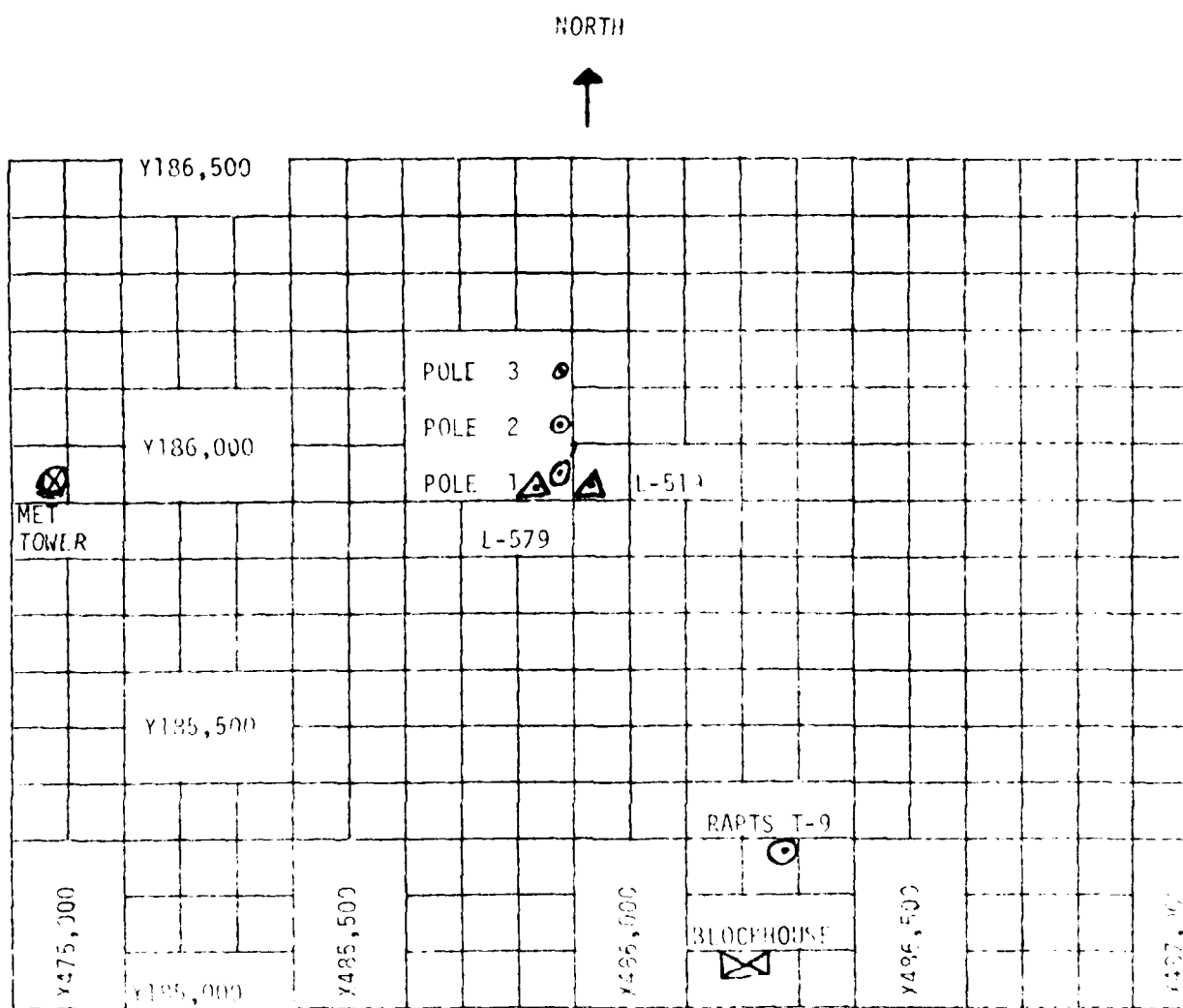
SITE AND ALTITUDE

LC 33	2km
NICK	2KM

(b) Air structure data (rawinsonde) were collected at the following met sites. Data were collected from surface to as high as possible in 500-foot increments.

SITE AND TIME

WSD	0700
WSD	0815
WSD	1010



1. MET TOWER - 4 Bendix Model T-20 Anemometers at 17 ft, 62 ft, 130 ft, and 202 ft with F/A recorders.
2. POLE ANEMOMETER - Bendix Model T-120 with F/A recorders.
 - (a) Pole #1 - 38.7 ft.
 - (b) Pole #2 - 53.0 ft.
 - (c) Pole #3 - 81.6 ft.
3. RAPTS T-9 Radar Automatic Pilot-Balloon Tracking System T-9 Radar.

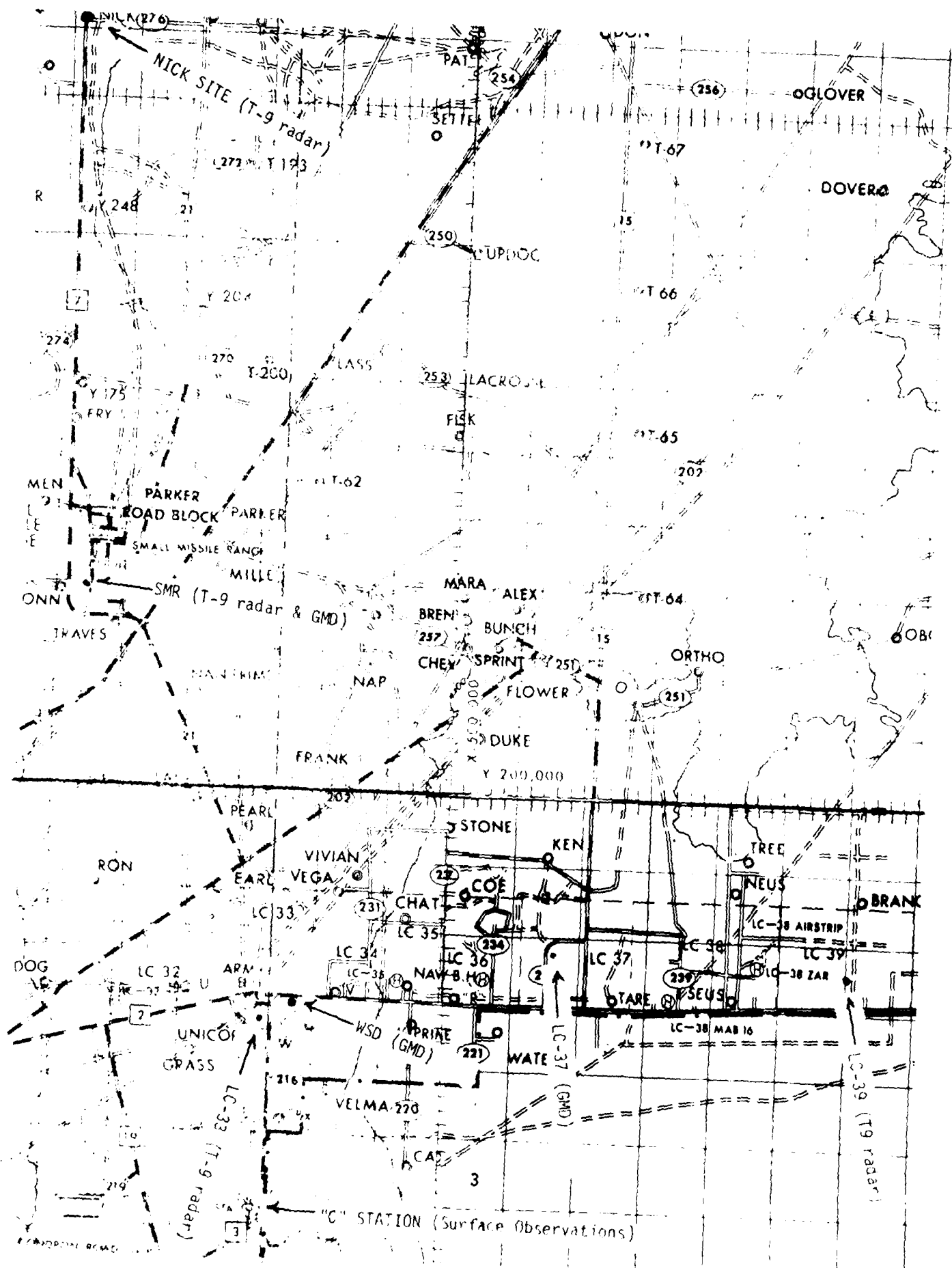


TABLE 1. Surface Observation taken at 1010 MST,
06 November 1980, at LC-33, 19311C MLRS.
Missile Number V18-001, Round Number V-128/PF-1.

ELEVATION	3980.04	FT/MGL
PRESSURE	884.2	MBS
TEMPERATURE	18.9	°C
RELATIVE HUMIDITY	38	%
DEW POINT	4.4	°C
DENSITY	1050	GM/M ³
WIND SPEED	02	KTS
WIND DIRECTION	120	DEGREES
CLOUD COVER	CLEAR	

TABLE 2

LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1 X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL			POLE #2 X485,874.93 Y186,012.00 H4033.57 53.0 ft. AGL			POLE #3 X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	084	03	T-30	102	*M	T-30	099	01
T-20	084	03	T-20	102	M	T-20	099	01
T-10	084	03	T-10	102	M	T-10	099	01
0.0	084	03	0.0	105	M	0.0	097	01
T+10	084	02	T+10	108	M	T+10	096	01

M= Missing Data
 *= Pen Stopped Inking

TABLE 3

LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	112	02	T-30	146	01
T-20	111	00	T-20	150	01
T-10	114	01	T-10	140	01
0.0	120	02	0.0	141	01
T+10	121	02	T+10	142	02

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	132	*M	T-30	102	01
T-20	132	M	T-20	102	01
T-10	132	M	T-10	102	01
0.0	132	M	0.0	106	01
T+10	132	M	T+10	107	01

M = Missing Data
 * = Pen Stopped Inking

PILOT BALLOON MEASURED WIND DATA

TABLE 4

RELEASED FROM LC-33 DATE 06 November 1980 TIME 1018 MST

COORDINATES (WSTM) X= 486,037.24 Y= 182,350.16 H= 3977.30

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH .

HEIGHTS ARE METERS AGL XX OR FEET AGL_____.

[illegible][illegible][illegible]

PILOT BALLOON MEASURED WIND DATA

TABLE 5

RELEASED FROM NICK DATE 06 NOVEMBER 1980 TIME 1017 MST

COORDINATES (WSTM) X= 470,734.56 Y= 255,755.64 H= 4126.57

NOTE: WIND DIRECTIONS ARE REFERENCED TO TRUE NORTH .

HEIGHTS ARE METERS AGL^{XX} OR FEET AGL_____.

[illegible][illegible][illegible]

STATION ALTITUDE 3939.00 FEET MSL
6 NOV. 89 0700 HRS MSL
ASCENSION, NO. 565

SIGNIFICANT LEVEL DATA
3110020565
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 6

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE		REL. HUM. PERCENT
885.9	3989.0	4.5	-1.1	67.0
880.0	4003.3	6.1	-3.0	52.0
870.0	4394.3	12.5	1.8	48.0
850.0	5060.8	12.8	-1.1	38.0
822.2	5700.6	14.5	.0	37.0
755.6	8300.8	10.6	-6.2	30.0
737.2	8902.1	10.4	-3.6	25.0
700.0	10389.0	7.1	-10.6	27.0
587.6	15050.4	-7	-21.4	19.0
563.0	16172.1	-1.2	-23.7	16.0
500.0	19241.2	-8.3	-29.6	10.0
400.0	24783.2	-22.6	-40.8	17.0
362.6	27130.5	-27.6	-45.0	17.0
330.6	29243.3	-33.1	-49.7	17.0
300.0	31515.4	-38.7		
250.0	35549.7	-48.8		
228.4	37489.1	-52.6		
213.4	38931.2	-53.7		
199.0	40403.5	-55.9		

STATION ALTITUDE 3939.00 FEET MSL
6 NOV. 80 0700 LMS MST
ASCENSION NO. 305

UPPER AIR DATA
3110020585
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT UEG
106.37053 LON UEG

TABLE 7

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (T) SPEED KNOTS	INDEX OF REFRACTION
3989.0	303.9	4.5	67.0	1106.3	649.9	50.0	1.000274
4000.0	303.5	4.7	65.3	1105.2	650.1	50.1	1.000274
4050.0	307.5	12.5	46.4	1054.6	659.5	55.3	1.000266
5000.0	851.9	12.8	38.9	1035.3	659.6	72.2	1.000257
5500.0	330.6	13.6	37.5	1013.6	660.6	139.8	1.000253
6000.0	321.6	14.5	36.9	992.4	661.6	215.5	1.000249
6500.0	305.8	13.8	35.4	977.6	660.6	230.9	1.000243
7000.0	792.3	12.8	33.9	963.0	659.6	223.6	1.000238
7500.0	776.1	11.9	32.4	946.7	658.5	213.0	1.000232
8000.0	764.1	11.1	30.9	934.5	657.5	204.9	1.000227
8500.0	750.3	10.5	28.5	919.7	656.8	213.9	1.000222
9000.0	736.7	10.4	25.0	903.8	656.5	245.3	1.000216
9500.0	723.3	9.2	25.7	831.0	655.1	262.3	1.000213
10000.0	710.1	8.3	26.4	878.5	653.7	270.5	1.000209
10500.0	697.1	6.9	26.8	865.8	652.4	276.8	1.000206
11000.0	684.1	6.1	26.0	852.4	651.4	280.9	1.000202
11500.0	671.4	5.2	25.1	839.1	650.4	283.1	1.000198
12000.0	658.9	4.4	24.2	826.1	649.4	283.6	1.000194
12500.0	646.7	3.6	23.4	813.2	648.4	281.8	1.000190
13000.0	634.6	2.7	22.5	800.6	647.4	280.8	1.000187
13500.0	622.8	1.9	21.7	788.1	646.4	289.6	1.000183
14000.0	611.2	1.1	20.8	775.9	645.4	285.6	1.000180
14500.0	599.9	.2	19.9	763.8	644.4	276.6	1.000176
15000.0	588.7	-.6	19.1	752.0	643.4	264.2	1.000173
15500.0	577.6	-.9	17.8	738.6	643.0	246.9	1.000170
16000.0	566.7	-1.1	16.5	725.3	642.7	229.0	1.000166
16500.0	555.9	-2.0	16.0	713.7	641.7	225.3	1.000163
17000.0	545.3	-3.1	16.0	703.1	640.4	231.2	1.000161
17500.0	534.8	-4.3	16.0	692.6	639.0	245.3	1.000158
18000.0	524.6	-5.4	16.0	682.3	637.6	251.2	1.000155
18500.0	514.5	-6.6	16.0	672.1	636.2	254.8	1.000153
19000.0	504.7	-7.7	16.0	662.2	634.8	250.5	1.000150

STATION ALTITUDE 3989.00 FEET MSL
6 NOV. 69 0700 HRS MDT
ASLUTION NO. 505

UPPER AIR DATA
3110020585
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 7 (Cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM ³ ALTITUDE	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
19500.0	494.8	-9.0	16.0	652.2	633.3	247.2	9.6	1.000148
20000.0	485.0	-10.3	16.1	642.4	631.8	246.1	9.4	1.000146
20500.0	475.3	-11.5	16.2	632.7	630.2	245.6	9.1	1.000143
21000.0	465.8	-12.8	16.3	623.2	628.6	245.0	8.9	1.000141
21500.0	456.5	-14.1	16.4	613.8	627.1	243.5	9.3	1.000139
22000.0	447.4	-15.4	16.5	604.6	625.5	242.5	10.2	1.000136
22500.0	438.5	-16.7	16.6	595.6	623.9	241.1	12.2	1.000134
23000.0	429.8	-18.0	16.7	586.7	622.4	239.0	13.9	1.000132
23500.0	421.2	-19.3	16.8	577.9	620.8	237.9	14.4	1.000130
24000.0	412.8	-20.6	16.9	569.3	619.2	236.2	14.2	1.000128
24500.0	404.6	-21.9	17.0	560.8	617.6	234.1	13.4	1.000126
25000.0	396.4	-23.1	17.0	552.1	616.1	232.5	12.6	1.000124
25500.0	388.2	-24.1	17.0	543.0	614.8	230.0	11.9	1.000122
26000.0	380.2	-25.2	17.0	534.0	613.5	228.8	12.3	1.000120
26500.0	372.5	-26.3	17.0	525.2	612.2	225.5	13.2	1.000118
27000.0	364.6	-27.3	17.0	516.6	610.9	224.6	14.2	1.000116
27500.0	356.9	-28.5	17.0	508.3	609.3	221.4	15.1	1.000114
28000.0	349.4	-29.8	17.0	500.1	607.7	219.0	15.7	1.000112
28500.0	342.0	-31.1	17.0	492.1	606.2	216.4	16.0	1.000110
29000.0	334.8	-32.4	17.0	484.3	604.6	214.8	16.2	1.000108
29500.0	327.6	-33.6	15.4**	476.5	603.0	211.6	15.7	1.000106
30000.0	320.5	-34.9	11.6**	468.6	601.4	208.5	15.2	1.000105
30500.0	313.6	-36.1	7.8**	461.0	599.8	205.3	15.0	1.000103
31000.0	306.8	-37.4	3.9**	453.4	598.2	204.3	15.0	1.000101
31500.0	300.2	-38.7	.1**	446.0	596.6	200.4	15.9	1.000099
32000.0	293.5	-39.9		438.4	595.0	200.4	17.0	1.000098
32500.0	286.9	-41.2		430.3	593.4	200.5	18.8	1.000096
33000.0	280.5	-42.4		423.6	591.8	201.9	20.3	1.000094
33500.0	274.3	-43.7		416.3	590.2	202.4	21.3	1.000093
34000.0	268.1	-44.9		409.3	588.5			1.000091
34500.0	262.1	-46.2		402.3	586.9			1.000090
35000.0	256.3	-47.4		395.5	585.3			1.000088

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

UPPER AIR DATA 3110020585 WHITE SANDS			GEODETIC COORDINATES 32.40043 LAT DEG 106.37033 LONG DEG											
TABLE 7 (Cont)														
STATIC ALTITUDE 3989.00 FEET MSL 6 NOV. 68 ASCENSION NO. 385			WIND DATA DIRECTION DEGREES (TN)						INDEX OF REFRACTION					
GEODETIC ALTITUDE MSL FEET			PRESSURE MILLIBARS		TEMPERATURE AIR DEGREES CELSIUS		REL. HUM. PERCENT		DENSITY GM/CUBIC METER		SPEED OF SOUND KIOTS		SPEED KNOTS	
33500.0			250.0		-48.7				381.8		583.7		1.000087	
35000.0			244.8		-49.7				381.6		582.4		1.000085	
36500.0			239.2		-50.7				374.5		581.1		1.000083	
37000.0			233.7		-51.6				367.5		579.8		1.000082	
37500.0			228.3		-52.6				360.6		578.5		1.000080	
38000.0			223.0		-53.0				352.6		578.0		1.000079	
38500.0			217.8		-53.4				345.2		577.5		1.000077	
39000.0			212.7		-53.8				337.8		577.0		1.000075	
39500.0			207.7		-54.3				331.0		576.0		1.000074	
40000.0			202.8		-55.3				324.4		575.0		1.000072	

STATION ALTITUDE 5489.00 FEET MSL
 6 NOV. 83 0730 HRS MST
 ASSOCIATION NO. 305

MANDATORY LEVELS
 3110020503
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

TABLE 8

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	PERCENT	DIRECTION DEGREES(TN)	SPEED KNOTS	
850.0	5057.	12.8	-1.1	38.	76.7	.8	
800.0	6733.	13.2	-2.0	35.	228.7	2.6	
750.0	8504.	10.5	-7.0	28.	214.4	2.7	
700.0	10379.	7.1	-10.6	27.	275.5	8.4	
650.0	12365.	3.8	-15.1	24.	282.3	9.7	
600.0	14484.	.2	-20.1	20.	276.7	12.7	
550.0	16761.	-2.6	-24.9	16.	225.3	9.4	
500.0	19214.	-6.3	-29.6	16.	248.0	9.6	
450.0	21662.	-15.1	-34.9	16.	260.3	9.9	
400.0	24742.	-22.6	-40.3	17.	309.7	13.0	
350.0	27913.	-29.7	-46.0	17.	263.4	15.6	
300.0	31452.	-38.7			266.4	15.9	
250.0	35472.	-48.8					
200.0	40201.	-55.7					

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

GEODLTIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

SIGNIFICANT LEVLL DATA

3110020580

WHITE SANDS

TABLE 9

STATION ALTITUDE 3989.00 FEET MSL

6 NOV 80 0815 HRS MSL

ASCENSION 140. 586

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
604.6	3989.0	10.7	-1.4	43.0
680.9	4103.5	9.6	-0.9	48.0
671.6	4388.2	12.7	1.1	45.0
650.0	4830.4	15.4	3.2	44.0
628.0	5820.8	14.9	2.8	44.0
779.8	7480.0	12.1	-0.4	42.0
751.4	8498.7	10.9	-4.7	33.0
741.6	9058.4	11.1	-5.4	31.0
613.6	13951.8	1.2	-13.6	32.0
554.0	16645.4	-2.3	-18.3	28.0
497.4	19429.0	-8.1	-23.7	27.0

STATION ALTITUDE 3989.00 FEET MSL
 6 NOV. 60 0815 HRS MST
 ASCENSION NO. 586

UPPER AIR DATA
 3110020580
 WHITE SANDS

GEODOLITE COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

TABLE 10

GEODOLITE ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
3489.00	884.6	10.7	43.0	1083.1	657.1		.0	1.000267
4000.0	864.2	10.6	43.5	1083.0	657.0	260.3	.0	1.000267
4500.0	860.3	13.4	44.7	1052.5	660.4	260.3	.6	1.000266
5000.0	852.8	15.3	44.0	1026.4	662.8	260.3	1.2	1.000264
5500.0	837.6	15.1	44.0	1009.0	662.5	260.3	1.7	1.000259
6000.0	822.7	14.6	43.8	992.6	662.0	254.3	2.4	1.000254
6500.0	807.9	13.8	43.2	977.9	660.9	248.0	3.1	1.000249
7000.0	793.4	12.9	42.6	963.3	659.9	253.4	2.8	1.000244
7500.0	779.2	12.1	41.8	949.0	658.9	262.1	2.7	1.000239
8000.0	765.2	11.5	37.4	934.1	658.1	266.6	4.7	1.000232
8500.0	751.4	10.9	33.0	919.5	657.3	269.0	6.6	1.000225
9000.0	737.7	10.8	31.0	903.1	657.2	271.3	8.4	1.000220
9500.0	724.1	9.9	31.1	889.6	656.0	273.1	9.3	1.000216
10000.0	710.6	8.9	31.2	876.3	654.9	275.3	8.9	1.000212
10500.0	697.7	7.9	31.3	863.3	653.7	277.3	8.8	1.000208
11000.0	684.9	6.9	31.4	850.4	652.6	279.0	9.0	1.000205
11500.0	672.3	6.0	31.5	837.7	651.4	281.5	9.0	1.000201
12000.0	659.9	5.0	31.6	825.2	650.2	284.6	8.9	1.000197
12500.0	647.0	4.0	31.7	813.0	649.1	290.7	9.2	1.000194
13000.0	635.9	3.0	31.8	800.9	647.9	297.7	9.8	1.000190
13500.0	624.2	2.1	31.9	789.0	646.8	298.2	10.2	1.000187
14000.0	612.7	1.1	31.9	777.1	645.6	293.7	10.6	1.000184
14500.0	601.1	.5	31.2	764.3	644.8	279.7	10.6	1.000180
15000.0	589.8	-.2	30.4	751.8	644.1	262.2	11.5	1.000177
15500.0	578.7	-.8	29.7	739.4	643.3	247.8	11.5	1.000173
16000.0	567.6	-1.5	29.0	727.2	642.5	235.6	11.5	1.000170
16500.0	557.1	-2.1	28.2	715.3	641.7	225.3	10.1	1.000167
17000.0	546.4	-3.0	27.9	704.1	640.6	220.7	9.3	1.000164
17500.0	535.3	-4.1	27.7	693.3	639.3	226.2	9.0	1.000161
18000.0	525.7	-5.1	27.5	682.7	638.1			1.000158
18500.0	515.6	-6.2	27.3	672.3	636.6			1.000155
19000.0	505.7	-7.2	27.2	662.0	635.5			1.000153

STATION ALTITUDE 3939.00 FEET MSL
 6 NOV. 67 0815 HRS MST
 ASCESSION NO. 500

MANDATORY LEVELS
 3110020500
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

TABLE 11

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	PERCENT	DIRECTION DEGREES (TN)	SPEED KNOTS	
857.0	5087.	15.3	3.1	44.	200.3	1.3	
800.0	6767.	13.3	.9	43.	250.2	3.0	
750.0	8542.	10.9	-4.8	33.	269.2	6.7	
700.0	10422.	8.1	-7.9	31.	277.1	8.8	
650.0	12419.	4.2	-11.1	32.	289.5	9.1	
600.0	14535.	.4	-14.7	31.	276.0	10.7	
550.0	16813.	-2.7	-18.7	28.	216.8	9.5	
500.0	19268.	-7.8	-23.5	27.			

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

SIGNIFICANT LEVEL DATA
 3110020587
 WHITE SANDS

STATION ALTITUDE 3949.00 FEET MSL
 6 NOV 63 1010 LRS MSL
 ASSESSMENT NO. 567

TABLE 12

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
684.3	3989.0	15.0	2.5	43.0
676.2	4182.1	17.0	1.4	35.0
666.8	4546.7	15.3	.7	37.0
655.0	4901.6	14.5	.7	39.0
622.8	5994.5	15.3	1.4	39.0
601.0	6719.6	14.1	.4	39.0
760.0	8188.9	11.3	-5.2	31.0
729.8	9298.8	10.2	-7.9	27.0
703.4	10416.9	7.6	-7.6	33.0
601.2	11107.9	6.6	-9.3	31.0
615.0	13867.9	2.1	-13.4	26.0
598.4	14627.3	1.3	-16.5	25.0
470.8	20948.3	-2.8	-21.5	19.0

STATION ALTITUDE 3909.00 FEET MSL
 6 40V. 30
 1010 HRS. EST
 10.0. 307

UPPER AIR DATA
 3110020587
 WHITE SANDS

TABLE 13

SEA LEVEL ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	DIRECTION DEGREES (TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	884.3	15.0	43.0	1065.7	662.3	0	0	1.000271
4000.0	884.2	15.1	42.5	1064.9	662.5	302.5	0	1.000271
4500.0	860.3	12.5	36.7	1044.9	662.6	302.5	4	1.000262
5000.0	852.8	14.6	39.0	1029.6	661.8	302.5	8	1.000259
5500.0	837.6	14.9	39.0	1009.6	662.2	302.5	1.2	1.000255
6000.0	822.6	15.3	39.0	990.4	662.7	302.5	1.6	1.000252
6500.0	808.0	14.5	39.0	975.7	661.7	296.5	2.5	1.000247
7000.0	793.5	13.6	37.5	961.4	660.6	292.1	3.7	1.000241
7500.0	779.2	12.6	34.8	947.6	659.4	289.6	4.9	1.000235
8000.0	765.2	11.7	32.0	934.0	658.2	288.4	6.3	1.000229
8500.0	751.4	11.0	29.9	919.4	657.3	287.7	7.6	1.000223
9000.0	737.8	10.5	28.1	904.5	656.7	287.8	8.6	1.000218
9500.0	724.4	9.7	28.1	890.5	655.8	287.9	9.6	1.000214
10000.0	711.2	8.6	30.8	877.9	654.5	284.5	9.6	1.000212
10500.0	698.2	7.5	32.8	865.2	653.2	280.9	9.6	1.000209
11000.0	685.4	6.4	31.4	851.4	652.4	282.6	9.4	1.000205
11500.0	672.6	5.0	30.4	838.1	651.5	288.9	9.3	1.000201
12000.0	660.3	5.2	29.5	825.2	650.5	288.9	9.8	1.000197
12500.0	648.1	4.4	28.5	812.4	649.5	291.1	10.9	1.000193
13000.0	636.1	3.5	27.6	799.8	648.5	294.5	11.6	1.000189
13500.0	624.3	2.7	26.7	787.5	647.4	293.7	12.0	1.000185
14000.0	612.7	2.0	25.8	775.0	646.5	303.1	12.8	1.000182
14500.0	601.3	1.4	25.2	762.0	645.9	302.6	14.0	1.000178
15000.0	590.9	1.2	24.6	748.4	645.6	300.6	15.0	1.000175
15500.0	580.0	1.0	24.2	734.8	645.4	288.8	15.0	1.000172
16000.0	569.4	0.8	23.7	721.5	645.2	277.5	15.6	1.000168
16500.0	557.4	0.7	23.2	708.4	645.0	280.4	14.7	1.000165
17000.0	546.9	0.5	22.7	695.5	644.8	253.5	13.8	1.000162
17500.0	536.6	0.3	22.3	682.8	644.6	243.5	13.3	1.000159
18000.0	526.5	0.2	21.8	670.4	644.4	237.6	12.9	1.000156
18500.0	516.6	0.0	21.3	658.2	644.2	235.4	12.8	1.000153
19000.0	506.9	0.2	20.9	646.3	644.0	232.5	13.1	1.000150

STATION ALTITUDE 3939.00 FEET MSL		UPPER AIR DATA		GEODETTIC COORDINATES	
6 NOV. 60		3110020507		32.40043 LAT DEG	
ASCENSION IS. 507		WHITE SANDS		106.37033 LON DEG	

GEOPHYSIC		TEMPERATURE		REL. HUM.		DENSITY		SPEED OF		WIND DATA		INDEX	
ALTITUDE	PRESSURE	AIR	DEWPOINT	PERCENT	GM/CUBIC	SOUND	METER	KNOTS	OF	DIRECTION	SPEED	OF	REFRACTION
MSL FEET	MILLIBARS	DEGREES	CELSIUS							DEGREES (IN)	KNOTS		
19500.0	497.4	-0.3	-20.3	20.4	634.5	643.8							1.000148
20000.0	496.0	-0.5	-20.7	19.9	623.0	643.6							1.000145
20500.0	470.9	-0.7	-21.1	19.4	611.7	643.4							1.000142

TABLE 13 (Cont)

STATION ALTITUDE 3989.00 FEET MSL
 6 NOV. 50
 ASCENSION; 10. 587

MANDATORY LEVELS
 311002050/
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

TABLE 14

PRESSURE EQUIVALENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES (T)	SPEED KNOTS
856.0	5037.	14.6	.9	39.	302.5	.9
802.0	6769.	14.0	.2	39.	293.7	3.2
750.0	8544.	10.9	-6.1	30.	237.7	7.7
700.0	10422.	7.6	-7.7	33.	281.4	9.6
650.0	12414.	4.5	-12.1	29.	290.8	10.7
600.0	14539.	1.4	-16.4	25.	302.8	14.1
550.0	16833.	.6	-18.2	23.	257.6	14.0
500.0	19339.	-.3	-20.2	21.		

